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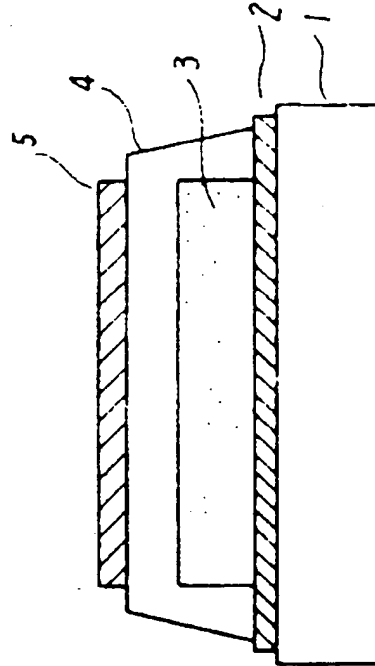
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APPLICANT : HITACHI LTD;

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TITLE : FORMATION OF ELECTRODE FOR
THIN-FILM LITHIUM BATTERY



ABSTRACT : PURPOSE: To obtain an electrode, which has an excellent electric contact and a high mechanical adhesion, by interposing beforehand a film made of the original metal of a positive electrode material between the positive electrode material and a positive current-collecting body of a thin-film lithium battery, the positive electrode of which is prepared from a metal chalcogenide or a metal oxide.

CONSTITUTION: After a titanium film 2 with about $0.1\mu\text{m}$ thickness is formed on an iron plate 1 with 0.4mm thickness, TiS_2 is formed on the film 2 into a film 3 of around $3\mu\text{m}$ thickness by the CVD method. Next, a solid electrolyte material represented by the formula, $(1-X)\text{Li}_4\text{SiO}_4 \times \text{Li}_3\text{PO}_4$ ($0 < X < 1$), is formed over the film 3 into a film 4 with around $2\mu\text{m}$ thickness by sputtering. After that, lithium is formed on the film 4 into a film 5 with around $1\mu\text{m}$ thickness by a vapor-deposition method, thereby obtaining a basic structure for a thin-film lithium battery. As a result of measurement carried out in a dry atmosphere on the basic characteristics of the battery such as open-circuit voltage and short-circuit current, at room temperature, an open-circuit voltage of 2.4V and a short-circuit current of $3\text{mA}/\text{cm}^2$ were obtained.

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